Instruction 51-1206
3-30-10

Copyright © 2007, 2010
by S&S® Cycle, Inc.

All rights reserved.
Printed in the U.S.A.

S&S® Cycle, Inc.
14025 Cty Hwy G, PO Box 215
Viola, Wisconsin 54664
Phone: 608-627-1497 • Fax: 608-627-1488
Technical Service Phone: 608-627-TECH (8324)
Technical Service Email: sstech@sscycle.com
Website: www.sscycle.com

Installation Instructions for S&S® Super Stock Ignition

DISCLAIMER:
S&S parts are designed for high performance, closed course, racing applications and are intended for the very experienced rider only. The installation of S&S parts may void or adversely affect your factory warranty. In addition such installation and use may violate certain federal, state, and local laws, rules and ordinances as well as other laws when used on motor vehicles used on public highways, especially in states where pollution laws may apply. Always check federal, state, and local laws before modifying your motorcycle. It is the sole and exclusive responsibility of the user to determine the suitability of the product for his or her use, and the user shall assume all legal, personal injury risk and liability and all other obligations, duties, and risks associated therewith.

The words Harley®, Harley-Davidson®, H-D®, Sportster®, Evolution®, and all H-D part numbers and model designations are used in reference only. S&S Cycle is not associated with Harley-Davidson, Inc.

SAFE INSTALLATION AND OPERATION RULES:

Before installing your new S&S part it is your responsibility to read and follow the installation and maintenance procedures in these instructions and follow the basic rules below for your personal safety.

- Gasoline is extremely flammable and explosive under certain conditions and toxic when breathed. Do not smoke. Perform installation in a well ventilated area away from open flames or sparks.
- If motorcycle has been running, wait until engine and exhaust pipes have cooled down to avoid getting burned before performing any installation steps.
- Before performing any installation steps disconnect battery to eliminate potential sparks and inadvertent engagement of starter while working on electrical components.
- Read instructions thoroughly and carefully so all procedures are completely understood before performing any installation steps. Contact S&S with any questions you may have if any steps are unclear or any abnormalities occur during installation or operation of motorcycle with a S&S part on it.
- Consult an appropriate service manual for your motorcycle for correct disassembly and reassembly procedures for any parts that need to be removed to facilitate installation.
- Use good judgment when performing installation and operating motorcycle. Good judgment begins with a clear head. Don't let alcohol, drugs or fatigue impair your judgment. Start installation when you are fresh.
- Be sure all federal, state and local laws are obeyed with the installation.
- For optimum performance and safety and to minimize potential damage to carb or other components, use all mounting hardware that is provided and follow all installation instructions.
- Motorcycle exhaust fumes are toxic and poisonous and must not be breathed. Run motorcycle in a well ventilated area where fumes can dissipate.

IMPORTANT NOTICE:

Statements in this instruction sheet preceded by the following words are of special significance.

⚠ WARNING

Means there is the possibility of injury to yourself or others.

⚠ CAUTION

Means there is the possibility of damage to the part or motorcycle.

NOTE

Other information of particular importance has been placed in italic type.

S&S recommends you take special notice of these items.

WARRANTY:
All S&S parts are guaranteed to the original purchaser to be free of manufacturing defects in materials and workmanship for a period of twelve (12) months from the date of purchase. Merchandise that fails to conform to these conditions will be repaired or replaced at S&S's option if the parts are returned to us by the purchaser within the 12 month warranty period or within 10 days thereafter.
In the event warranty service is required, the original purchaser must call or write S&S immediately with the problem. Some problems can be rectified by a telephone call and need no further course of action.
A part that is suspect of being defective must not be replaced by a Dealer without prior authorization from S&S. If it is deemed necessary for S&S to make an evaluation to determine whether the part was defective, a return authorization number must be obtained from S&S. The parts must be packaged properly so as to not cause further damage and be returned prepaid to S&S with a copy of the original invoice of purchase and a detailed letter outlining the nature of the problem, how the part was used and the circumstances at the time of failure. If after an evaluation has been made by S&S and the part was found to be defective, repair, replacement or refund will be granted.

ADDITIONAL WARRANTY PROVISIONS:
(1) S&S shall have no obligation in the event an S&S part is modified by any other person or organization.
(2) S&S shall have no obligation if an S&S part becomes defective in whole or in part as a result of improper installation, improper maintenance, improper use, abnormal operation, or any other misuse or mistreatment of the S&S part.
(3) S&S shall not be liable for any consequential or incidental damages resulting from the failure of an S&S part, the breach of any warranties, the failure to deliver, delay in delivery, delivery in non-conforming condition, or for any other breach of contract or duty between S&S and a customer.
(4) S&S parts are designed exclusively for use in Harley-Davidson® and other American v-twin motorcycles. S&S shall have no warranty or liability obligation if an S&S part is used in any other application.

⚠ DANGER

Disconnect the battery of your motorcycle before attempting this installation.

⚠ WARNING

Electrical connections are required to complete this installation. If you are unsure of your abilities to make these connections safely, please take your motorcycle to a qualified shop for the installation.

⚠ DANGER

This ignition system requires the use of VOES switch. If the VOES is inadvertently grounded, it will create an excess advance situation which could damage the engine in your motorcycle.

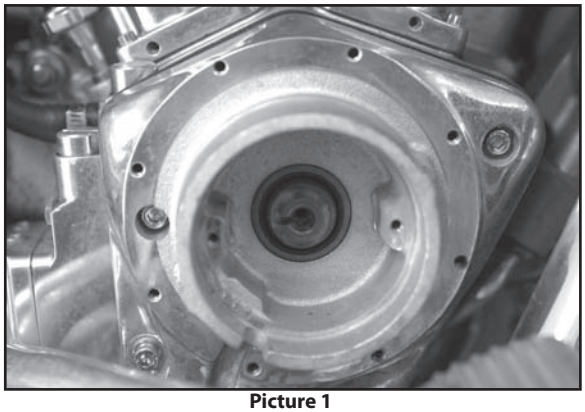
INSTALLATION

1- Preparation: Turn off the ignition switch and disconnect the negative battery cable before proceeding.

IMPORTANT NOTES:

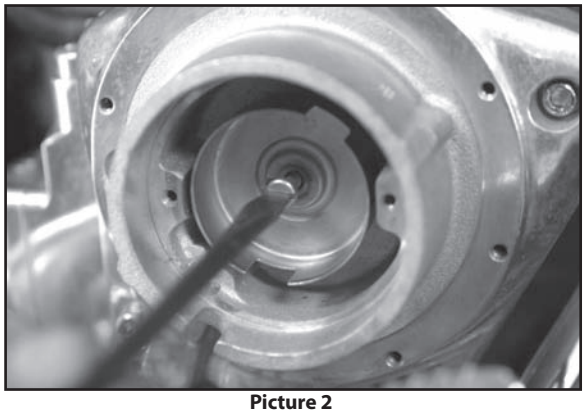
- *If your ignition was installed at the factory in a complete engine assembly, do not adjust the module. Breaking the tamper resistant seal will void your warranty.*
- *Factory installed Super Stock® ignitions have a break-in rev limit feature. It will gradually raise the rev-limit over the first 24 hours of running time from 4300 RPM to the maximum of 6300 RPM. Avoid dangerous situations that could require full power maneuvers during this initial break-in period.*
- *The Super Stock ignition module comes pre-programmed from S&S® for a specific engine size and style. You cannot modify the ignition timing curve.*
- *If your ignition was installed at S&S in a complete engine assembly, you should start at step 6.*

2- You should be starting from this point–an empty timing cavity.



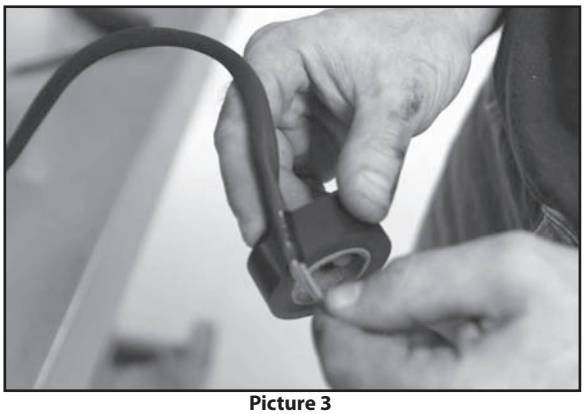
Picture 1

3- Install the included timing cup and screw. Be sure to put some blue threadlock on the screw and tighten securely (15-20 in-lbs).



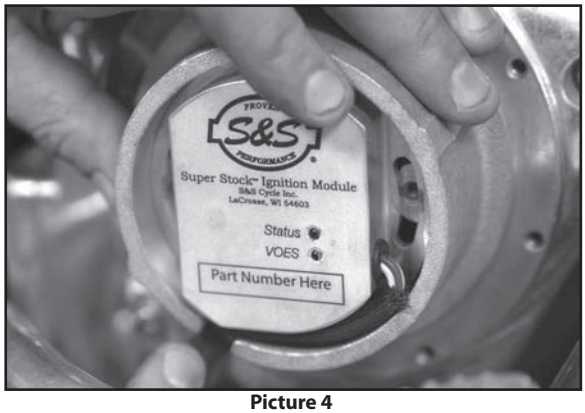
Picture 2

4- Wrap the end of the protective sleeve on the wiring harness with one layer of electrical tape. This will help slide it through the hole in the gear case and protect it from fraying.

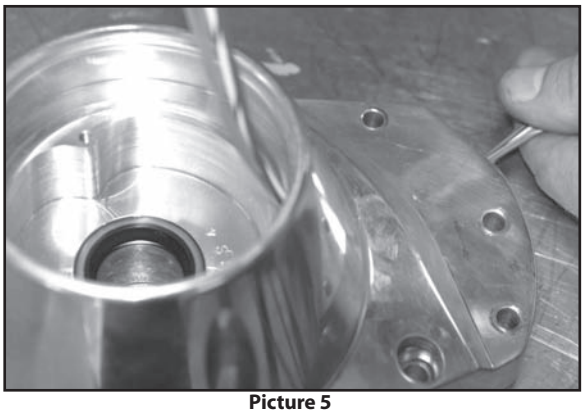


Picture 3

5- Place the module into the gear case area and route the wires according to your application. On cast S&S engines there is a channel to lay the wires in and on billet S&S gearcovers, there is a hole that the wires must feed through.



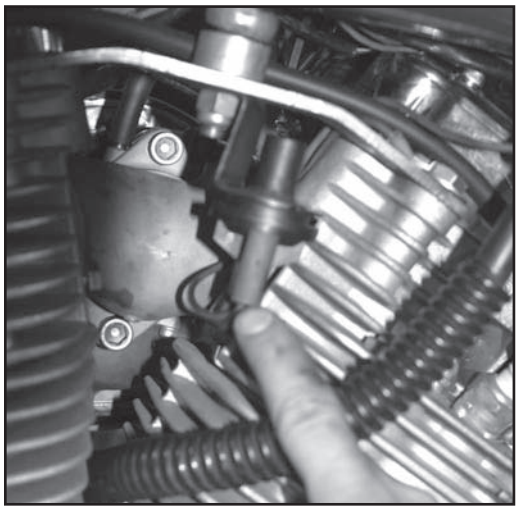
Picture 4



Picture 5

6- Route the wiring harness along the frame to the coil. You can route the wires for a generator engine behind the pushrod tubes or to the frame. Be sure that the wiring harness is not touching any hot or moving parts. Secure the harness to the frame using wire-ties once you are sure it is routed properly.

7- Mount the VOES switch as close to the carburetor as possible using the included bracket. Note: There is no polarity on the VOES so either wire can be used for ground or signal.
8- Connect the VOES hose from the switch to the nipple in the manifold. Trim the hose to be as short as possible without stretching or kinking it.

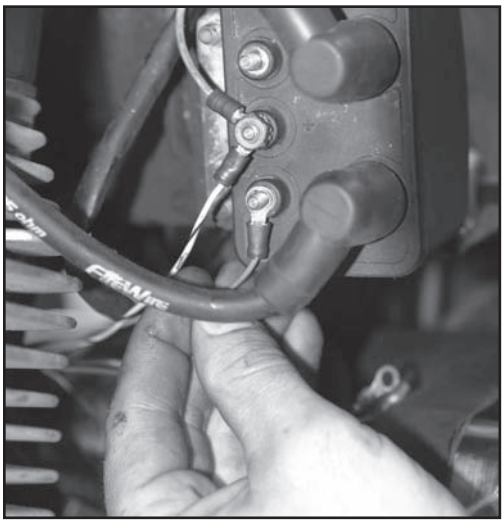


Picture 6

NOTE: *The Super Stock® ignition is a single-fire design requiring a single fire coil with a minimum of 3.0 ohms resistance, measured across the primary side of the coil. (The primary side of the coil is the side where wires from the ignition will be attached). Dual-plug engines will require two coils or a four-tower coil.*

9- You will need to make some crimp connections once you trim the wires to their proper lengths. Then, to wire the system follow the wire connection table below and Figure A to the right.

Picture 7



Picture 8

IGNITION MODULE		
White/Black	Switched 12-volt power	Small ring terminal
Pink	Front cylinder on coil	Small ring terminal
Blue	Rear cylinder on coil	Small ring terminal
Violet/White	VOES	Tab assembly (male)
Brown	Tachometer/Diagnostic Port	Tab assembly (male)

VOES SWITCH		
Black	Ground	Large ring terminal
Black	Ignition module	Receptacle assembly (female)

WIRING DIAGRAM

(Using two coils for dual plug engines)

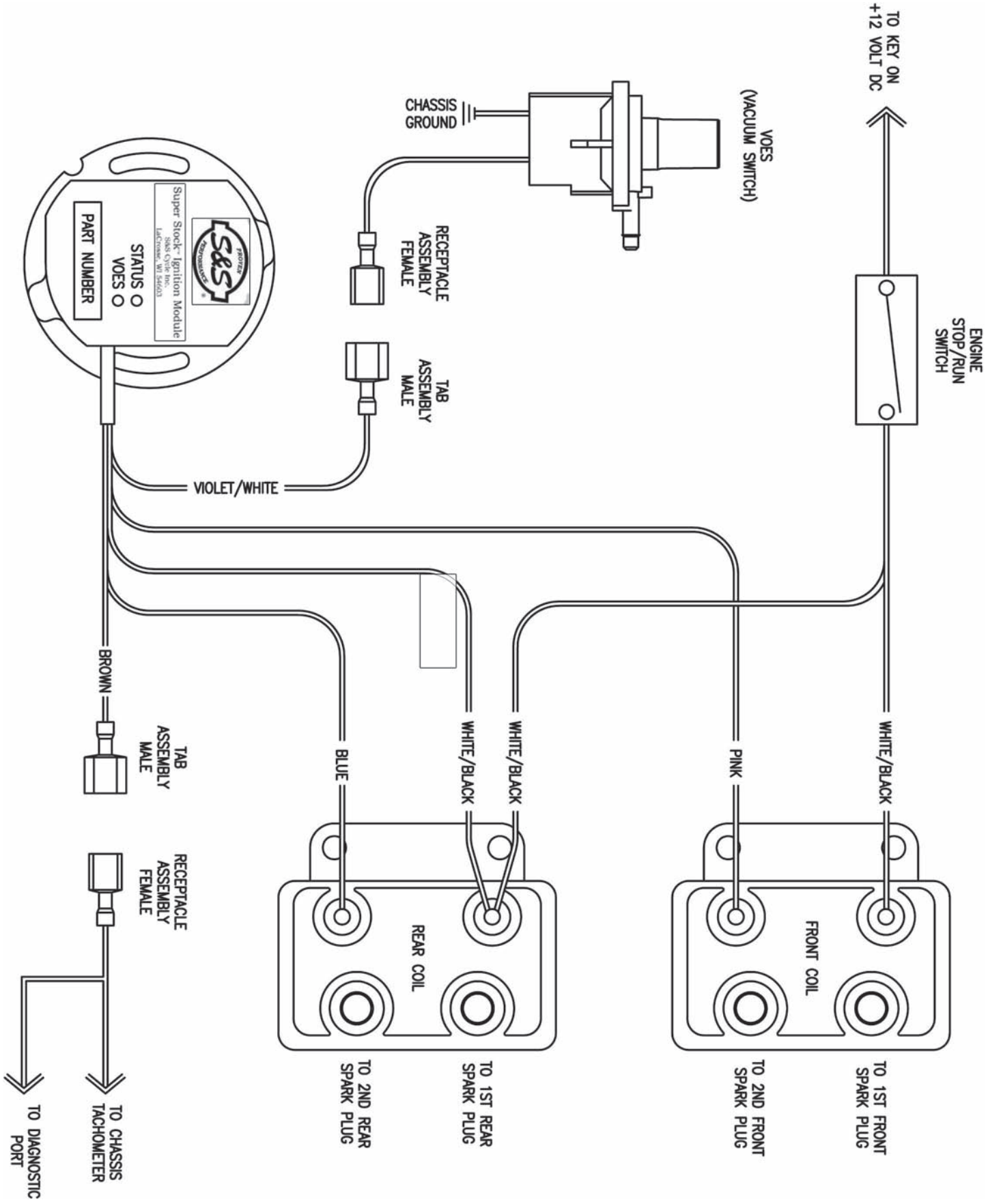


Figure A

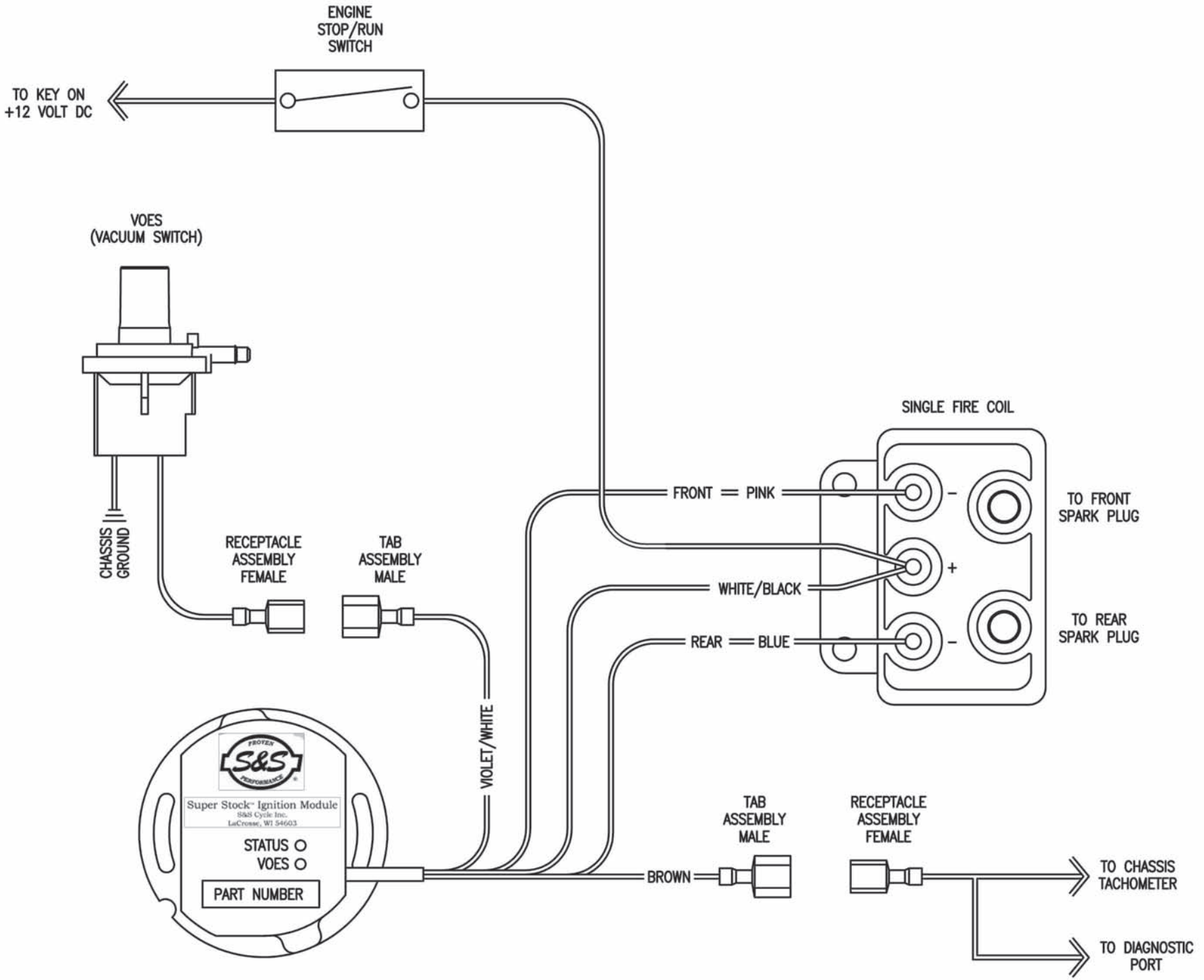

ENGINE
STOP/RUN
SWITCH
TO KEY ON
+12 VOLT DC
VOES
(VACUUM SWITCH)
CHASSIS
GROUND
RECEPTACLE
ASSEMBLY
FEMALE
TAB
ASSEMBLY
MALE
SINGLE FIRE COIL
FRONT
PINK
WHITE/BLACK
REAR
BLUE
TO FRONT
SPARK PLUG
TO REAR
SPARK PLUG
VIOLET/WHITE
Super Stock™ Ignition Module
S&S Cycle Inc.
LaCrosse, WI 54603
STATUS
VOES
PART NUMBER
BROWN
TAB
ASSEMBLY
MALE
RECEPTACLE
ASSEMBLY
FEMALE
TO CHASSIS
TACHOMETER
TO DIAGNOSTIC
PORT

Figure B

NOTE: If your ignition was installed at S&S® in a complete engine assembly, timing was set at the factory. Do not adjust timing. Breaking the tamper resistant seal will void your warranty. You can now connect the negative battery, and are finished with the installation procedure. Please see page 7 for general system notes.

SETTING STATIC TIMING

1- You will need to remove the timing plug from the crankcase. Remove the spark plugs and rotate the motor until you bring the front piston to TDC on the compression stroke. Look for the mark shown in the picture below.

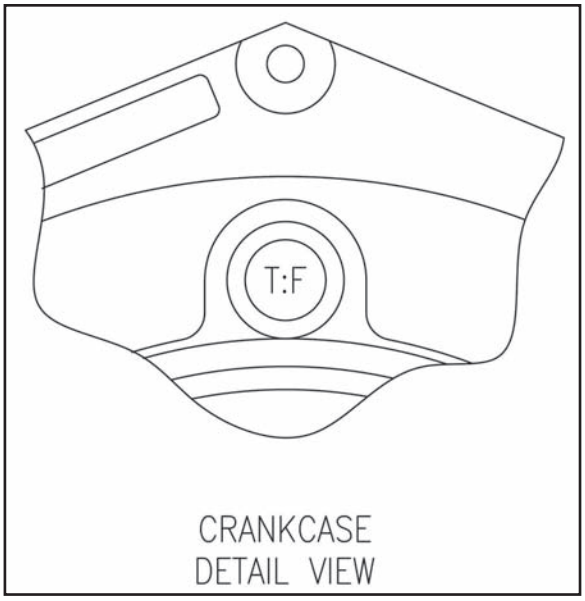
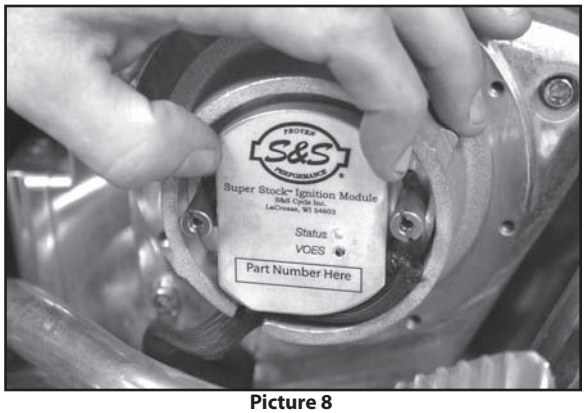


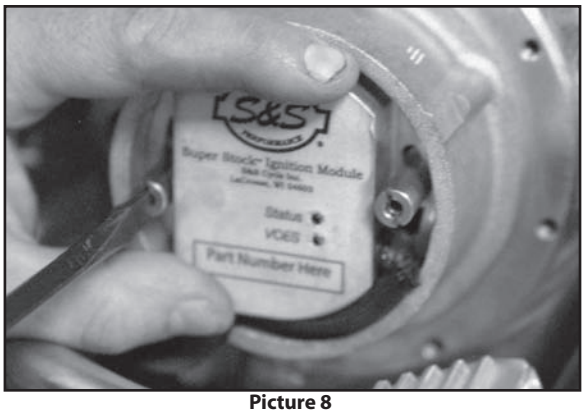
Figure C

2- Use test plugs or jumper wires to ground the spark plug wires. Then connect the negative battery cable again.



Picture 8

3- Turn on the ignition switch and confirm the engine cut off switch is in the run position. Rotate the ignition module back and forth SLOWLY until the red LED turns on. Once the light is on, rotate the module CLOCKWISE until the light just goes out. The light goes out when the module is at TDC.



Picture 8

4- Use blue threadlock and tighten the standoffs (12-20 in-lbs) to secure the module in its proper timing position. Turn the ignition off and put the spark plugs in.

GENERAL SYSTEM NOTES:

1- The S&S® Super Stock® Ignition requires the use of a 3 OHM single-fire coil like the S&S coil PN 55-1571.
2- S&S recommends spiral core spark plug wires. Do not use solid copper or non-resistor plug wires.
3- S&S recommends Champion RN12YC (14mm) or Champion RA8HC (12mm) spark plugs gapped at .038" to .042".
4- The VOES must be installed and wired for proper installation. When the VOES is activated, the green LED light in the module will illuminate.
5- Dealer software for engine diagnostics is available through the S&S website, www.sscycle.com or through your customer service representative.
6- S&S recommends using 91 or higher octane fuel.
7- Ignition systems for shovelhead style S&S engines are kick start compatible.

These charts may be used to ensure your module is correct for the application, and may be used to order replacement modules and kits.

S&S® SUPER STOCK® IGNITION KITS AND REPLACEMENT PARTS FOR S&S AFTERMARKET® ENGINES			
Application	Factory Module	Replacement Module	Ignition Kit*
S&S 80" Alternator/Generator shovelhead	55-1240B	55-1240	55-1250
S&S 93" Alternator/Generator shovelhead	55-1241B	55-1241	55-1251
S&S 93" HC Alternator/Generator shovelhead	55-1242B	55-1242	55-1252
S&S 103" Alternator/Generator shovelhead	55-1243B	55-1243	55-1253
S&S 96" V96	55-1244B	55-1244	55-1254
S&S 113" V113	55-1245B	55-1245	55-1255
S&S 124" V124	55-1246B	55-1246	55-1256
Kit contains S&S Super Stock module with hardware, pick-up cup and mounting screw, VOES switch with hardware, connectors and instructions. Replacement modules do not have break-in rev limiter activated.			

S&S® SUPER STOCK® REPLACEMENT MODULES FOR S&S EMISSIONS CERTIFIED ENGINES		
Application	Factory Module	Replacement Module
S&S $3^{5}/_{8}$" V-Series	55-1264B	55-1264
S&S 4" V-Series	55-1265B	55-1265
S&S $4^{1}/_{8}$" V-Series	55-1266B	55-1266
Replacement modules do not have break-in rev limiter activated.		